

Source Water Assessment Report



Public Water Supply: SHAWNEE CO RWD 4

**Assessment Areas Include:
338, 339**



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Reports were generated with the Automated Source Water Assessment Tool (ASWAT). Assessments were completed online using ASWAT by hundreds of state employees, public water supply staff, and technical assistant providers throughout the State of Kansas.

Table Of Contents

[Report Description](#)

<u>Assessment Area 338</u>	<u>1.0</u>
<u>Executive Summary</u>	<u>1.1</u>
<u>Potential Sources</u>	<u>1.2</u>
<u>Added Sources</u>	<u>1.3</u>
<u>Potential Contaminants Summary</u>	<u>1.4</u>
<u>Potential Contaminants Listing</u>	<u>1.5</u>
<u>Protection Measures</u>	<u>1.6</u>
<u>Assessment Analysis</u>	<u>1.7</u>
<u>Site Comments</u>	<u>1.8</u>
<u>Added Site Comments</u>	<u>1.9</u>
<u>Analysis Question Comments</u>	<u>1.10</u>

<u>Assessment Area 339</u>	<u>2.0</u>
<u>Executive Summary</u>	<u>2.1</u>
<u>Potential Sources</u>	<u>2.2</u>
<u>Added Sources</u>	<u>2.3</u>
<u>Potential Contaminants Summary</u>	<u>2.4</u>
<u>Potential Contaminants Listing</u>	<u>2.5</u>
<u>Protection Measures</u>	<u>2.6</u>
<u>Assessment Analysis</u>	<u>2.7</u>
<u>Site Comments</u>	<u>2.8</u>
<u>Added Site Comments</u>	<u>2.9</u>
<u>Analysis Question Comments</u>	<u>2.10</u>

Report Description

Detailed Explanation of Entire Report:

The 1996 amendments to the Safe Drinking Water Act require each state to develop a Source Water Assessment Program (SWAP) and a Source Water Assessment (SWA) for each Public Water Supply (PWS) that treats and distributes raw source water. In Kansas there are 761 public water supplies that require SWAs. A SWA includes a delineation of the source water assessment area, an inventory of potential contaminant sources, and a susceptibility analysis.

A PWS can consist of one or more individual assessment areas that require different assessments. In general, an assessment area is delineated at a two-mile fixed radius for a groundwater well. A surface water intake assessment area is the upstream-drainage area (watershed), inside the state border. Additionally, an assessment area can consist of an individual well, group of wells, an individual surface water intake, or multiple surface water intakes.

After each assessment is completed a report is automatically generated using an Internet-based application called the Automated Source Water Assessment Tool (ASWAT). The individual assessment reports combine to form the entire SWA report for a PWS.

A map of each Assessment Area was also generated with ASWAT. However, for security reasons the maps are not included in this report. To obtain a copy of the map(s), please contact your local PWS.

All PWS reports will be available for viewing and downloading on KDHE's Watershed Management Section website(<http://www.kdhe.state.ks.us/nps>) in 2004.

SHAWNEE CO RWD 4 Summary:

AA	Type	Diversion Id
338	Ground water multiple wells	004, 003, 001
339	Ground water single well	05

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**
Diversion Id's: **004, 003, 001**
Status: **Accepted**
Submit Date: **2003-01-31 10:20:41**

Executive Summary:

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

Executive Summary

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **338**

Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	32	38	37	44	42	46
SLS Range	Low	Low	Low	Low	Low	Low

A – Microbiological

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

Susceptibility Likelihood Range

SLS Range	
0–50	Low Susceptibility
51–80	Moderate Susceptibility
81–100	High Susceptibility

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Diversion Id's: **004, 003, 001**
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Submit Date: **2003-01-31 10:20:41**

Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

Potential Sources

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **338**

Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
151265	Single-family Housing Construction	1521	B
151285	Single-family Housing Construction	1521	B
151268	Highway and Street Construction	1611	B
151271	Top, Body, and Upholstery Repair Shops and Paint Shops	7532	B
151113	Animal Specialty Services	752	C
151260	Oil and Gas Field services	1389	C
151283	Single-family Housing Construction	1521	C
151288	Single-family Housing Construction	1521	C
151296	Single-family Housing Construction	1521	C
151368	Single-family Housing Construction	1521	C
148031	Nonresidential Construction	1542	C
151318	Nonresidential Construction	1542	C
151342	Dog, Cat, and Other Pet Food Manufacturing	2047	C
151279	Wood Kitchen Cabinets Manufacturing	2434	C
151282	Industrial Gases Manufacturing	2813	C
151375	Sheet Metal Work Manufacturing	3444	C

Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
147791	Fabricated Metal Products Manufacturing	3499	C
147792	Machinery, Except Electrical Manufacturing	3599	C
147552	Farm Product Warehousing and Storage	4221	C
151364	Refuse Systems	4953	C
148000	Construction and Mining Machinery	5082	C
151355	Construction and Mining Machinery	5082	C
151281	Farm and Garden Machinery	5083	C
147768	Scrap and Waste Materials	5093	C
147997	Gasoline Service Station	5541	C
147996	Mobile Home Park	6515	C
148027	Mobile Home Park	6515	C
147991	Sporting and Recreational Camps	7032	C
151292	Photofinishing Laboratory	7384	C
147780	Auto Truck Repair Service	7538	C
147989	Auto Truck Repair Service	7538	C
147990	Auto Truck Repair Service	7538	C
151417	Auto Truck Repair Service	7538	C
148029	Car Wash	7542	C
147772	Repair Services, Nec	7699	C
151121	Repair Services, Nec	7699	C
151412	Repair Services, Nec	7699	C

Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3000035	Reinhart Roofing	00161	C
3000367	Gartner Oil Co	04497	C
3000395	Meier's Ready Mix	04912	C
3001038	Fleming Foods, Grocery	14361	C
3001078	Hydro Flex Inc	15647	C
3001266	Amoco #5289	23197	C
3001302	Continental Grain	23417	C
3001307	Quaker Oats	23432	C
3001381	Goodyear Tire Rubber Co	24541	C
3001637	Youth Center Of Topeka	26252	C
3001679	Kmart #7409	26432	C

Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3001786	Graybeal Exc Land	26905	C
3001823	Payless Shoesource	27072	C
3002039	Topeka Technical College, Topeka, 1620 N	28239	C
3002133	Topeka, City Of, Drainage	28751	C
3002228	Wagner Mud Jacking Inc	29221	C
3002327	Stover, Wayne	29687	C
3002484	Skinner Nursery	80178	C
3002502	American Truck Line	80229	C

Regulated Identified Contaminated Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
7000618	HYDRO-FLEX CORP., INC.	C408900026	C
7000625	GOODYEAR TIRE AND RUBBER	C408900539	C

Regulated Solid Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6000249	USD #345 ROCHESTER ELEMENTARY SCHOOL	M-KS72-OO13	C

Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6000712	GOODYEAR TIRE RUBBER CO.	I-KS72-PO02	C
6001315	SHAWNEE CO. M.S.D. #31	M-KS72-DO31	C
6001324	TOPEKA (NORTH PLANT)	M-KS72-IO02	C
6001325	TOPEKA (NORTH PLANT)	M-KS72-IO02	C
6001339	SHAWNEE CO. M.S.D. #4	M-KS72-OO20	C

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Assessment Area: **338**
Diversion Id's: **004, 003, 001**
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Added Sources:

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

Added Sources

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**

Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9001015	339	4939	Q

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**
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Potential Contaminants Summary:

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

Potential Contaminants Summary

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **338**

Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
11	1	24	8	14	10

A – Microbiological

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

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Assessment Area: **338**
Diversion Id's: **004, 003, 001**
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Submit Date: **2003-01-31 10:20:41**

Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

A – Microbiological **B** – Inorganic Compounds **B1** – Eutrophication – Phosphorous
B2 – Sedimentation **B*** – Nitrates **C** – Synthetic Organic Compounds
C* – Pesticides **D** – Volatile Organic Compounds

Potential Contaminants Listing

Public Water Supply: SHAWNEE CO RWD 4

Assessment Area: 338

Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7538	Auto Truck Repair Service	Inorganics, VOCs	B
"	"	"	D
7542	Car Wash	Inorganics, VOCs	B
"	"	"	B1
"	"	"	B2
"	"	"	D
5082	Construction and Mining Machinery	NA	NA
2047	Dog, Cat, and Other Pet Food Manufacturing	BOD, oil and grease, TSS	A
"	"	"	B
3499	Fabricated Metal Products Manufacturing	inorganics, VOCs	B
"	"	"	D
5541	Gasoline Service Station	Inorganics, VOCs	B
"	"	"	D
1611	Highway and Street Construction	Sedimentation	B2
2813	Industrial Gases Manufacturing	NA	D
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	B
"	"	"	D

Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
6515	Mobile Home Park	Sanitary wastes, Fertilizers	A
"	"	"	B
"	"	"	B1
"	"	"	B*
1542	Nonresidential Construction	Sedimentation	B2
1389	Oil and Gas Field services	Oil, Salt Water	B
"	"	"	C
7384	Photofinishing Laboratory	NA	B
"	"	"	D
5093	Scrap and Waste Materials	Metals, TSS	B
3444	Sheet Metal Work Manufacturing	Metals and TSS, VOCs and metal etch	B
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	B
"	"	"	D
2434	Wood Kitchen Cabinets Manufacturing	TSS, VOCs	B

Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
2434	Wood Kitchen Cabinets Manufacturing	TSS, VOCs	D
752	Animal Specialty Services	Sanitary, fertilizers	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
4221	Farm Product Warehousing and Storage	TSS, VOCs	B
"	"	"	D
5083	Farm and Garden Machinery	inorganics	B
4953	Refuse Systems	ALL	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
"	"	"	C*
"	"	"	D
7699	Repair Services, Nec	inorganics	B

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Assessment Area: **338**
Diversion Id's: **004, 003, 001**
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Submit Date: **2003-01-31 10:20:41**

Protection Measures:

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

Protection Measures

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **338**

Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7538	Auto Truck Repair Service	Inorganics, VOCs	Discharge to POTW. Manage oil products and used oil so that it is not in contact with water	40 CFR 442 and
7542	Car Wash	Inorganics, VOCs	Install and maintain sediment and grease traps where appropriate	40 CFR 442
5082	Construction and Mining Machinery	NA	Discharge to POTW	NA
2047	Dog, Cat, and Other Pet Food Manufacturing	BOD, oil and grease, TSS	Wastewater pretreatment and/or discharge to a POTW	40 CFR 122 and State or federal Storm water pollution prevention regulations
3499	Fabricated Metal Products Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
5541	Gasoline Service Station	Inorganics, VOCs	Maintain area to minimize fuel contamination	NA

Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
1611	Highway and Street Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
2813	Industrial Gases Manufacturing	NA	NA	NA
3599	Machinery, Except Electrical Manufacturing	inorganics, VOCs	Manage wastes properly and treat process wastewater prior to discharge to a POTW or direct	State or federal Storm water pollution prevention regulations
6515	Mobile Home Park	Sanitary wastes, Fertilizers	Discharge to POTW. Minimize use of lawn chemicals	KAR 28–5
1542	Nonresidential Construction	Sedimentation	Erosion and Sediment Control	KAR 28–16, KDHE
1389	Oil and Gas Field services	Oil, Salt Water	Proper management of production wastes	KAR 28–41, 45, 40 CFR 435

Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7384	Photofinishing Laboratory	NA	Discharge to POTW. Recycle chemicals	CFR 40 459
5093	Scrap and Waste Materials	Metals, TSS	Minimize contact with storm water	State or federal Storm water pollution prevention regulations
3444	Sheet Metal Work Manufacturing	Metals and TSS, VOCs and metal etch	Minimize outdoor storage and control storm water runoff. Pre-treat process wastewater prior to discharge to POTW	40 CFR 464 and State or federal Storm water pollution prevention regulations
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28-48, KDHE, KDEM
7032	Sporting and Recreational Camps	sanitary, fertilizers, pesticides	Discharge to POTW. Minimize use of lawn chemicals	KAR 28-5
7532	Top, Body, and Upholstery Repair Shops and Paint Shops	Inorganics, VOCs	Discharge to POTW. Recycle where appropriate. Properly maintain oil product and waste. Manage paint and solvent wastes properly	NA

Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
2434	Wood Kitchen Cabinets Manufacturing	TSS, VOCs	Discharge of process waters to POTW. Minimize outdoor storage.	State or federal Storm water pollution prevention regulations
752	Animal Specialty Services	Sanitary, fertilizers	Collect and treat wastes.	NA
4221	Farm Product Warehousing and Storage	TSS, VOCs	Keep the area clean of grain. Use grease traps.	State or federal Storm water pollution prevention regulations
5083	Farm and Garden Machinery	inorganics	Discharge to POTW	NA
4953	Refuse Systems	ALL	Store wastes properly in order to minimize contact with storm water.	Maintain the lagoon or storage vessel properly. Control storm water run on and runoff to minimize contamination of storm water
7699	Repair Services, Nec	inorganics	Discharge to POTW	NA

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Assessment Analysis:

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

Assessment Analysis

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **338**

Ground Water Multiple Wells Analysis

A – Microbiological **B** – Inorganic Compounds

B* – Nitrates **C** – Synthetic Organic Compounds

C* – Pesticides **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is any well under the influence of surface water?	No	0	0	0	0	0	0
2	Do all PWS wells meet KS PWS water well construction standards?	Yes	0	0	0	0	0	0
3	Is any well less than 30 feet deep?	No	0	0	0	0	0	0
4	Is gravel pack within 20 feet of any well surface?	No	0	0	0	0	0	0
5	Does a PWS own or control all the areas around the wells?	Yes	0	0	0	0	0	0
6	Does Zone B consist entirely of native grass?	Yes	0	0	0	0	0	0
7	Is there a contaminated well in Zone B?	No	0	0	0	0	0	0
8	Is a class V UIC well present?	No	0	0	0	0	0	0
9	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
10	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
11	Are any non-farm home sites present in Zone B?	No	0	0	0	0	0	0
12	Do all the non-farm home sites have a water quality protection plan?	Yes	0	0	0	0	0	0
13	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
14	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
15	Is there grazing livestock in Zone B?	No	0	0	0	0	0	0
16	Have all livestock producers implemented water quality protection measures?	Yes	0	0	0	0	0	0
17	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0

No.	Question	Response	A	B	B*	C	C*	D
18	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
19	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
20	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
21	Are any orchards present in Zone B?	No	0	0	0	0	0	0
22	Are orchard nutrient and pesticide management plans in use for each site?	Yes	0	0	0	0	0	0
23	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	No	0	0	0	0	0	0
24	Is there a railroad or major highway in Zone B or C?	No	0	0	0	0	0	0
25	Is there oil production in Zone B or C?	No	0	0	0	0	0	0
26	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
27	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
28	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
29	Is a solid waste landfill in Zone B or C?	No	0	0	0	0	0	0
30	Are there unplugged, abandoned water wells present in Zone C?	No	0	0	0	0	0	0
31	Are any commercial, industrial, or urban area present in Zone C?	Yes	1	1	1	1	1	1
32	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
33	Is there livestock confinement in Zone C?	No	0	0	0	0	0	0
34	Is each confined livestock facility registered with KDHE?	Yes	0	0	0	0	0	0
35	Do all the livestock producers have water quality protection measures in place?	Yes	0	0	0	0	0	0
36	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
37	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
38	Does a perennial stream flow into Zone C?	Yes	1	1	1	1	1	1
39	Are watershed water quality protection plans in place?	No	1	1	1	1	1	1

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**
Diversion Id's: **004, 003, 001**
Status: **Accepted**
Submit Date: **2003-01-31 10:20:41**

Site Comments:

The Site Comments section lists all the comments that were added for the potential sources of contamination found in the assessment area.

Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding detail to the sites that can be referenced for more information.

This local information may include comments on potential contamination threats (or lack there of), local water quality protection initiatives, etc. Adding comments are optional and are mainly focused on sources in areas that could have the greatest impact on water supply if a spill or release occurred in the environment. It is left to the discretion of the PWS and/or source water assessment committee to add comments.

Site Comments

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**

Comments for Unregulated Sites

Did Not Receive Any Comments

Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

Comments for Regulated Leaking Storage Tank Sites

Did Not Receive Any Comments

Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments

Comments for Regulated Waste Water Sites

Did Not Receive Any Comments

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**
Diversion Id's: **004, 003, 001**
Status: **Accepted**
Submit Date: **2003-01-31 10:20:41**

Added Site Comments:

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

Added Site Comments

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**

Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
339	9001015	well was outside all zones	NOVA SEARCY

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**
Diversion Id's: **004, 003, 001**
Status: **Accepted**
Submit Date: **2003-01-31 10:20:41**

Analysis Question Comments:

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Evaluators have the option to add comments to questions to clarify why a response was given or to give more details to a question. Local comments and feedback from people that are familiar with the assessment area is an important aspect of the assessment. The comments greatly improve the assessment by adding clarification and details that could not be identified with a simple yes or no response.

Analysis Question Comments

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **338**

Comments for Analysis Questions

Analysis Question	Question Comments	Author
Did Not Receive Any Comments		

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Executive Summary:

The Executive Summary gives the assessment area's Susceptibility Likelihood Score (SLS) for each contaminant of concern category.

SLS indicates which contaminant category is most likely to impact a given public water supply. Contaminants of concern for groundwater include microbiological, inorganic compounds, nitrates, synthetic organic compounds, pesticides, and volatile organic compounds. Contaminants of concern for surface water include microbiological, inorganic compounds, eutrophication – phosphorus, sedimentation, synthetic organic compounds, pesticides, and volatile organic compounds.

To determine the assessment area's susceptibility to contamination, a qualitative (semi-quantitative) screening level susceptibility analysis was designed that utilizes general assumptions and best professional judgement. It is a systematic procedure comprised of simple yes/no questions. Each question in the susceptibility analysis focuses on the presence or absence of potential pollution sources in the assessment area. SLS is most useful in helping the Public Water Supply (PWS) focus on water quality protection actions towards a contaminant category of concern. For example, if the SLS for microbiological contamination is high, relative to volatile organic compounds (VOC), water supply protection planners would conclude that the attention should be directed towards microbiological contaminant sources rather than VOC sources.

Executive Summary

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **339**

Susceptibility Likelihood Scores for Assessment Area

Contaminant Category	A	B	B*	C	C*	D
Susceptibility Likelihood Score – SLS	41	45	45	48	48	46
SLS Range	Low	Low	Low	Low	Low	Low

A – Microbiological

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

Susceptibility Likelihood Range

SLS Range	
0–50	Low Susceptibility
51–80	Moderate Susceptibility
81–100	High Susceptibility

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Potential Sources:

The Potential Sources section lists all the sites that have been identified as potential sources of contamination.

Potential sources of contamination may include land uses, industry, or businesses that could generate or store chemicals/substances that could potentially contaminate the water supply only if released into the environment. Both unregulated sites from business location databases and regulated sites from various KDHE databases were compiled. Additional sites could have been added by an evaluator through the assessment process to supplement the original data.

The 1987 Standard Industrial Classifications (SIC) were used to identify potential contaminate sites. The SIC system classifies establishments into industries on the basis of the primary activities of the establishment.

Each assessment area is delineated with 3 assessment zones. These zones can be used to get a general understanding of the potential influence sites have based on proximity to the water supply. Zone A is a 100-foot radius around a groundwater well and a 1000-foot radius around a surface water intake. Zone B is a 2000-foot radius around wells and a hydrological delineated buffer around the surface water sources. Zone C is a 2-mile radius around wells and the balance of the watershed for intakes. The potential sources listed in this section are sorted to show all the potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business is identified in the study as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

The data for the potential sources of contamination was compiled from May through August in 2002. Some of the databases used were incomplete datasets that are continually being updated. Due to the incompleteness, inaccuracies, and new development, it is possible that sources of potential contamination that are in the assessment area are not included in the report. Inaccurate locations could also cause sources to show up in the assessment area that are not actually in the assessment. Additionally, duplication between the datasets could cause sites to show up multiple times in the assessment area.

Potential Sources

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **339**

Unregulated Potential Site Sources

Source No.	SIC Description	SIC ID	Zone
151217	Single-family Housing Construction	1521	C
151223	Single-family Housing Construction	1521	C
151224	Single-family Housing Construction	1521	C
136756	Wrecking and Demolition Work, Construction Demolition Landfill	1795	C
151052	Refuse Systems	4953	C
136758	Recreational Vehicle Parks and Campsites	7033	C

Regulated Confined Animal Feeding Operations Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Hazardous Waste Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Leaking Storage Tank Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
3001605	Meier's Ready Mix	26118	C

Regulated Identified Contaminated Potential Site Sources

Did Not Contain Any Of These Potential Site Sources

Regulated Solid Waste Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
5000359	Consumers Sand Company, Inc.	0352-S	C
5000368	City of Topeka-Street Department	0361-S	C
5000455	R.J. Smalley	0438-S	C
5000463	Day Sand and Gravel	0446-S	C
5000525	Meier Ready Mix	0510-S	C
5000712	MPS-Associates	0691-S	C

Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6000413	NORTH RIDGE MOBILE HOME PARK	C-KS72-OO07	C

Regulated Waste Water Potential Site Sources

Source No.	Source Name	ID/Permit No.	Zone
6000416	KOA KAMPGROUND – GRANTVILLE	C-KS86-NO01	C

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Added Sources:

The Added Sources section lists all the sites that have been added as potential sources of contamination by an evaluator through the assessment process to supplement the original data.

The potential sources listed in this section are sorted to show the added potential sources in Zone A first, Zone B second, and Zone C third.

Although a facility or business was added as a potential concern, it does not necessarily mean a release or spill has occurred. Contamination could only occur if certain chemical substances are released into the environment and filter into the water supply source.

Added Sources

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**

Added Potential Site Sources

Source No.	Source Name	SIC ID	Zone
9001632	rural residences	0	B
9001044	cropland	115	B
9001631	cropland	115	B

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Potential Contaminants Summary:

The Contaminants Summary shows the number of identified unregulated sources in the assessment area for each contaminant of concern category.

In order to obtain the number of sources for each category, a relationship was correlated between each Standard Industrial Classification (SIC) and the contaminant of concern categories. Each SIC was assessed and associated with contaminant categories. For example, if not managed properly, a car wash (SIC 7542) could potentially contaminate an intake because of inorganic compounds (IOC) and volatile organic compounds (VOC); thus, a car wash is associated with IOCs and VOCs.

A chart displays a count for each contaminant category. The sum for each category represents the total number of identified sources that have been associated with that particular contaminant category. However, the total number of identified sources does not include contaminants from the Added Sources. In our example, a car wash would be considered 2 sources of contamination. It would be a potential source of contamination for IOCs and for VOCs; thus, 1 would be added to the total number of sources in the VOC category and 1 would be added to the IOC category.

Potential Contaminants Summary

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **339**

Number of Unregulated Site Sources Identified for each Contaminant Category

MicroBiological	Pesticides	IOC's	SOC's	VOC's	Nitrates
5	2	2	4	1	5

A – Microbiological

B* – Nitrates

C* – Pesticides

B – Inorganic Compounds

C – Synthetic Organic Compounds

D – Volatile Organic Compounds

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Potential Contaminants Listing:

The Potential Contaminants section lists the contaminant of concern category associated with each Standard Industrial Classification (SIC) found in an assessment area. A complete list of contaminant category codes are located at the bottom of this page.

The relationships defined between the Standard Industrial Classifications (SIC) and the contaminant of concern categories are displayed in a table format. Using our car wash example, the relationships can be better illustrated. A car wash could release IOC and VOC chemical substances. The connection is shown by indicating the SIC, 7542, and the associated contaminant categories, IOC (Category B) and VOC (Category D). However, the contaminants listed are not associated with any Added Sources.

The list is sorted by the SIC source description and it only shows unique SIC sources. For example, an assessment area can have 20 car washes in an assessment area, but the list is only going to show contaminant categories associated with car washes onetime. This is because all car washes have the same SIC and every car wash poses the same potential threat to water intakes.

A – Microbiological	B – Inorganic Compounds	B1 – Eutrophication – Phosphorous
B2 – Sedimentation	B* – Nitrates	C – Synthetic Organic Compounds
C* – Pesticides	D – Volatile Organic Compounds	

Potential Contaminants Listing

Public Water Supply: SHAWNEE CO RWD 4

Assessment Area: 339

Unregulated Identified Site Sources and associated Potential Contaminant Category

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
7033	Recreational Vehicle Parks and Campsites	sanitary, fertilizers, pesticides	A
"	"	"	B
"	"	"	B1
"	"	"	B*
"	"	"	C*
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	A
"	"	"	B1
"	"	"	B2
"	"	"	B*
"	"	"	C
1795	Wrecking and Demolition Work, Construction Demolition Landfill	TSS, could contain metals	B1
"	"	"	B2
4953	Refuse Systems	ALL	A
"	"	"	B
"	"	"	B1
"	"	"	B2
"	"	"	B*

Unregulated Identified Site Sources and associated Potential Contaminant Category.

SIC ID	SIC Source	Potential Contaminant	Contaminant Category
4953	Refuse Systems	ALL	C
"	"	"	C*
"	"	"	D

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Protection Measures:

The Protection Measures section shows water quality protection measures for the Standard Industrial Classifications (SIC) identified in the assessment area.

Previous sections of this report are designed to show areas that Public Water Supplies (PWS) can focus on to improve the susceptibility of an assessment area. This section helps identify water quality protection measures that a PWS can use as guidance for implementing action for a potential contaminant site in the assessment area. It focuses on protection measures that can reduce the risk of contamination to the water supply.

This portion of the report only displays water quality protection measures for each type of SIC found in the assessment area. It does not display protection measures for each site in the assessment area because every SIC should have the same or similar water quality protection management practices. However, the protection measures listed are not associated with any Added Sources.

Protection Measures

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **339**

Recommended Water Quality Protection Measures

SIC	SIC Source	Contaminant Source	Water Quality Protection Measure	Regulatory Authority
7033	Recreational Vehicle Parks and Campsites	sanitary, fertilizers, pesticides	Discharge to POTW. Minimize use of lawn chemicals	NA
1521	Single-family Housing Construction	Oil, Paint, Pesticides, Fertilizers	Proper cleaning and disposal of household hazardous waste. Proper storage, application, and clean up of pesticides and fertilizers	KAR 28–48, KDHE, KDEM
1795	Wrecking and Demolition Work, Construction Demolition Landfill	TSS, could contain metals	Erosion control and proper waste management, Proper cover and runoff containment for the fill area	40CFR Part 122 Storm Water Construction Permitting and KDHE Storm Water Pollution Prevention Rules, 40 CFR 445 and Solid Waste Permitting rules, Storm Water Permitting rules
4953	Refuse Systems	ALL	Store wastes properly in order to minimize contact with storm water.	Maintain the lagoon or storage vessel properly. Control storm water run on and runoff to minimize contamination of storm water

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Assessment Analysis:

The Assessment Analysis section displays the numbers assigned to each contaminant of concern category for each question in the susceptibility analysis.

This analysis is based on a decision tree framework consisting of a series of yes/no questions. These questions consider the proximity of contaminant sources to the water supply intake, the type of contaminant, and the application of pollution prevention or water quality protection practices to sources of contamination. As the evaluator moves through the analytical framework, susceptibility points are accumulated based on the presence of contaminant sources in the assessment area.

After all the questions have been answered, the SLS is calculated for each contaminant of concern category. The SLS is determined by counting the number of contamination risk factors found to occur in the delineated assessment area and applying a multiplier to this number. Because the number of contaminant category risk factors is not equal, the multiplier is used to establish a common scale for the SLS of each contaminant category.

Assessment Analysis

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**

Ground Water Single Well Analysis

A – Microbiological **B** – Inorganic Compounds
B* – Nitrates **C** – Synthetic Organic Compounds
C* – Pesticides **D** – Volatile Organic Compounds

No.	Question	Response	A	B	B*	C	C*	D
1	Is the well under the influence of surface water?	No	0	0	0	0	0	0
2	Does the well meet KS water well construction standards?	Yes	0	0	0	0	0	0
3	Is the depth of the well less than 30 feet?	No	0	0	0	0	0	0
4	Are there unplugged, abandoned water wells present in Zone A?	No	0	0	0	0	0	0
5	Is there gravel pack within 20 feet of the surface?	No	0	0	0	0	0	0
6	Does a PWS own or control Zone A?	Yes	0	0	0	0	0	0
7	Does Zone A consist entirely of native grass?	Yes	0	0	0	0	0	0
8	Is there a contaminated well in the Zone A?	No	0	0	0	0	0	0
9	Is a class V UIC well present?	No	0	0	0	0	0	0
10	Are any commercial, industrial, or urban areas present in Zone B?	Yes	1	1	1	1	1	1
11	Does each industrial/commercial site and urban area have a water quality protection plan in place?	No	1	1	1	1	1	1
12	Are any non-farm home sites present in Zone B?	No	0	0	0	0	0	0
13	Do all the non-farm home sites have a water quality protection plan?	Yes	0	0	0	0	0	0
14	Are any farmsteads present in Zone B?	Yes	1	1	1	1	1	1
15	Do all farmsteads have a water quality protection plan?	No	1	1	1	1	1	1
16	Does Zone B consist entirely of native grass?	Yes	0	0	0	0	0	0
17	Is there grazing livestock in Zone B?	No	0	0	0	0	0	0

No.	Question	Response	A	B	B*	C	C*	D
18	Do all the livestock producers have water quality protection measures in place?	Yes	0	0	0	0	0	0
19	Is there livestock confinement in Zone B?	No	0	0	0	0	0	0
20	Is each confined animal feeding operation registered with KDHE?	Yes	0	0	0	0	0	0
21	Is there corn or grain sorghum production in Zone B?	Yes	0	0	1	0	1	0
22	Are corn/grain sorghum nutrient and pesticide management plans in use for each site?	No	0	0	1	0	1	0
23	Are any orchards present in Zone B?	No	0	0	0	0	0	0
24	Are orchard nutrient and pesticide plans in use for each site?	Yes	0	0	0	0	0	0
25	Are there unsewered developments (concentrations of lagoons or septic systems) present in Zone B?	No	0	0	0	0	0	0
26	Is there a railroad or major highway in Zone B or C?	No	0	0	0	0	0	0
27	Is there oil production in Zone B or C?	No	0	0	0	0	0	0
28	Do coarse textured soils predominate Zones A, B and C?	Yes	1	1	1	1	1	1
29	Is an irrigation well located in Zone B or C?	Yes	0	1	1	1	1	1
30	Is a wastewater treatment facility in Zone B or C?	Yes	1	1	1	1	1	1
31	Is a solid waste landfill in Zone B or C?	No	0	0	0	0	0	0
32	Are there unplugged, abandoned water wells present in Zone B or C?	No	0	0	0	0	0	0
33	Are any commercial, industrial, or urban areas present in Zone C?	Yes	1	1	1	1	1	1
34	Are water quality protection plans in use for each site/area?	No	1	1	1	1	1	1
35	Is there livestock confinement in Zone C?	Yes	1	1	1	1	1	0
36	Is each confined livestock facility registered with KDHE?	No	1	1	1	0	1	0
37	Do all the livestock producers have water quality protection measures in place?	No	1	0	1	0	0	0
38	Are cropland nutrient management plans in place?	No	0	0	1	0	0	0
39	Are cropland pesticide management plans in place?	No	0	0	0	0	1	0
40	Does a perennial stream flow into Zone C?	Yes	1	1	1	1	1	1
41	Are watershed water quality protection plans in place?	No	1	1	1	1	1	1

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

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Site Comments

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**

Comments for Unregulated Sites

Did Not Receive Any Comments

Comments for Regulated Confined Animal Feeding Operations Sites

Did Not Receive Any Comments

Comments for Regulated Hazardous Waste Sites

Did Not Receive Any Comments

Comments for Regulated Leaking Storage Tank Sites

Did Not Receive Any Comments

Comments for Regulated Identified Contaminated Sites

Did Not Receive Any Comments

Comments for Regulated Solid Waste Sites

Did Not Receive Any Comments

Comments for Regulated Waste Water Sites

Potential Contaminant Site Name	Site No.	Site Comments	Author
KOA KAMPGROUND – GRANTVILLE	6000416	This facility uses non–discharging lagoons.	Nicole Fisher

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Added Site Comments:

The Added Site Comments section lists the comments for why sites were added as a potential source of contamination found to the assessment area.

Added Site Comments

Public Water Supply: **SHAWNEE CO RWD 4**

Assessment Area: **339**

Comments for Added Contaminant Sites

Added Contaminant Site Name	Site No.	Site Comments	Author
cropland	9001044	This site could contaminate the public water supply.	Nicole Fisher
cropland	9001631	This site could contaminate the public water supply.	Nicole Fisher
rural residences	9001632	This site could contaminate the public water supply.	Nicole Fisher

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**
Diversion Id's: **05**
Status: **Accepted**
Submit Date: **2003-01-31 10:36:17**

Analysis Question Comments:

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Analysis Question Comments

Public Water Supply: **SHAWNEE CO RWD 4**
Assessment Area: **339**

Comments for Analysis Questions

Analysis Question	Question Comments	Author
Did Not Receive Any Comments		